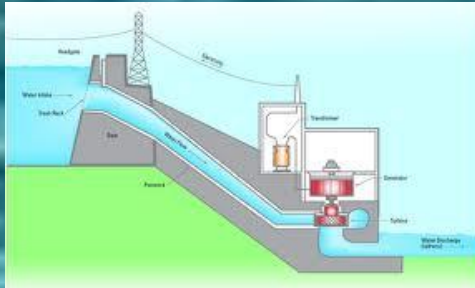


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How Hydroelectricity Works



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How Does Water Generate Electricity?

Water flows downhill and hits a pinwheel. The pinwheel which is continuously being turned by water turns the turbines. The turbines turn the generator which generates electricity.

History of Water Power!!

Hydroelectric power started nearly 2,000 years ago when the Greeks used water wheels to grind wheat. Then, in the 1700's hydropower was used for milling lumber and grain and for pumping irrigation water. In Appleton, Wisconsin they had become the first in the United States to use hydroelectric power in 1882. It produced 12.5 kilowatts of power. The total electricity generated was equal to 250 lights. Within the next 20 years 300 hydroelectric power plants were operated worldwide. The invention of hydraulic reaction turbine created the expansion of hydropower. 40% of the United States electricity has been provided by hydroelectric power since the early 1900's.

The amazing idea
of water to
electricity!

Advantages

Advantages-

- Once the dam has been constructed, electricity can be generated instantly.
- If electricity isn't needed, the gates can close and the water can be saved for another time when electricity is in high demand.
- Since dams are designed to last decades, therefore electricity can last for decades.
- Lakes forming behind dams can be used for recreational activities.
- Buildup of water means energy can be stored until needed.
- Hydroelectricity does not produce greenhouse gases which means it doesn't pollute the atmosphere.

Disadvantages

- Dams are very expensive to build.
- Many people living in valleys have to move so they don't get flooded.
- Old dams have breached (gave under the weight of water) causing massive floods and many deaths.
- Large dams can create geological problems.
- Natural environment can be destroyed from floods caused by dams.

Other Applications

Other applications of hydropower and dams include:

- Irrigation
- Supports agriculture with a constant supply of water.
- Provides facilities for water sports and activities.
- Tourist attractions
- Aquaculture in many reservoirs.

<http://hydroelectric-power-online.blogspot.com> The hydroelectric power plant diagram

<http://ga.water.usgs.gov/edu/hyhowworks.html> The generator diagram

http://www.xcelenergy.com/Safety_&_Education/Educational_Resources/Renewable_Energy/ci.Hydro_Power.com
The other hydroelectric power plant diagram

http://ffden-2.phys.uaf.edu/104_spring2004.web.dir/Tod_Robyn/Page_5.htm

<http://www.technologystudent.com/enegry1/hydr2.htm>

<http://library.thinkquest.org/06aug/01335/hydroelectric.htm>

Important Graphs and Diagrams

